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ARMY AVIATION TEST BOARD FORT RUCKER ALA
PRODUCTION ACCEPTANCE TEST OF AUXILIARY CARGO RAMP FOR THE CH-4--ETC(U)
OCT 68

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DEPARTMENT OF THE ARMY
UNITED STATES ARMY AVIATION TEST BOARD
Fort Rucker, Alabama 36360

STEBG-TD

SUBJECT: Final Report, Production Acceptance Test of Auxiliary
Cargo Ramp for the CH-47() Helicopter. USATECOM
Project Number 4-6-0200-09

OCT 29 1968

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1. REFERENCES

a. Letter, AMSAV-ER, Headquarters, US Army Aviation Materiel Command, 25 June 1968, subject: "Request for Production Acceptance Test, Alternate Auxiliary Cargo Ramp, CH-47 Helicopter, " with 1st Indorsement, AMSTE-BG, Headquarters, US Army Test and Evaluation Command, 8 July 1968.

b. Message, STEBG-TD-A 7-34, US Army Aviation Test Board, 26 July 1968, subject: "Partial Report, Alternate Cargo Ramp, CH-47 Helicopter, USATECOM Project Number 4-6-0200-09."

2. BACKGROUND

The need for an improved, alternate, CH-47() auxiliary cargo ramp was created by a high usage rate and large back order for the standard cargo ramps. US Army Aviation Materiel Command procured three sets of newly designed auxiliary cargo ramps for test. On 25 June 1968, the US Army Aviation Test Board (USAAVNTBD) was directed by the US Army Test and Evaluation Command to conduct a production acceptance test of the new design cargo ramps (reference a).

3. DESCRIPTION OF MATERIEL

The test item is designed to be fully interchangeable with and to perform the same functions as the standard models. The new design

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ramp extension is three and one-half inches wider and 14 inches longer than the production model, and is designed to be more durable. (See figure 1, inclosure.)

4. OBJECTIVES

To determine:

- a. Whether the test item is physically and functionally interchangeable with the production model.
- b. Whether the test item is suitable for its intended use.

5. SCOPE AND METHOD

The USAAVNTBD conducted this Category II production acceptance test at Fort Rucker, Alabama, during the period July 1968 - October 1968. The test cargo ramps were used as directed by reference a.

6. SUMMARY OF RESULTS

- a. The distance from the center of the aft wheel hubs to the ground was 10 1/2 inches each.
- b. The distance from the APU inlet to the ramp surface was seven feet and five inches; from rear of fuselage to ramp seven feet, three and one-half inches; from rear bulkhead to ramp six feet and nine inches; and from APU drip pan to ramp seven feet two and one-quarter inches.
- c. There were no problems encountered with installation of the test ramps.
- d. A 1 1/4-ton truck weighing 5,200 pounds was loaded and unloaded 20 times (figure 2). A tug weighing 9,960 pounds with a driver who weighed 160 pounds was loaded and unloaded 60 times (figure 3). A jump start with the 1 1/4-ton truck was performed with no double-hinging action. After each operation, the ramps were stowed and then returned to the loading position with no problems.

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e. The aircraft was parked on rough and reasonably hard ground with a ten-degree slope. The 1 1/4-ton truck was loaded and unloaded with no problems.

f. In the maintenance work platform position (figure 4) using the 36-inch long outer supporting leg, the ramp was four inches too high for a man of average height (five feet, eight inches) to work comfortably in the APU area. Stowage of the outer supporting leg on the bottom of the test ramp was unsatisfactory because the support leg foot contacted the ground before the ramp did (figure 5). One test ramp supported a total of 600 pounds (three men) and was considered sturdy and stable.

g. During an attempt to load a small fork lift, Model KG51T-20HRS, it was found that the hydraulic lifting guide rails were too long to pass under the rear bulkhead of the CH-47C Helicopter (figure 6).

h. One ramp was exposed to turbine oil with no deterioration of the nonskid surface.

i. No parts were required to support the test items during the test.

6. CONCLUSIONS

As a result of these tests, it is concluded that

The test CH-47() auxiliary cargo ramp: (1)

a. *Is physically and functionally interchangeable with the standard cargo ramp; and (2)*

b. *Is suitable for its intended use.*

7. RECOMMENDATIONS

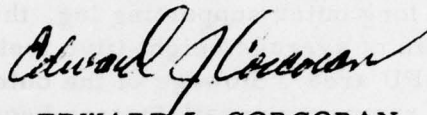
a. The discrepancies stated in paragraph 5f above be corrected.

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b. The test auxiliary cargo ramp be considered an acceptable
alternate for the standard item.

FOR THE PRESIDENT:



1 Incl
Photographs

EDWARD J. CORCORAN
Captain, Artillery
Acting Adjutant

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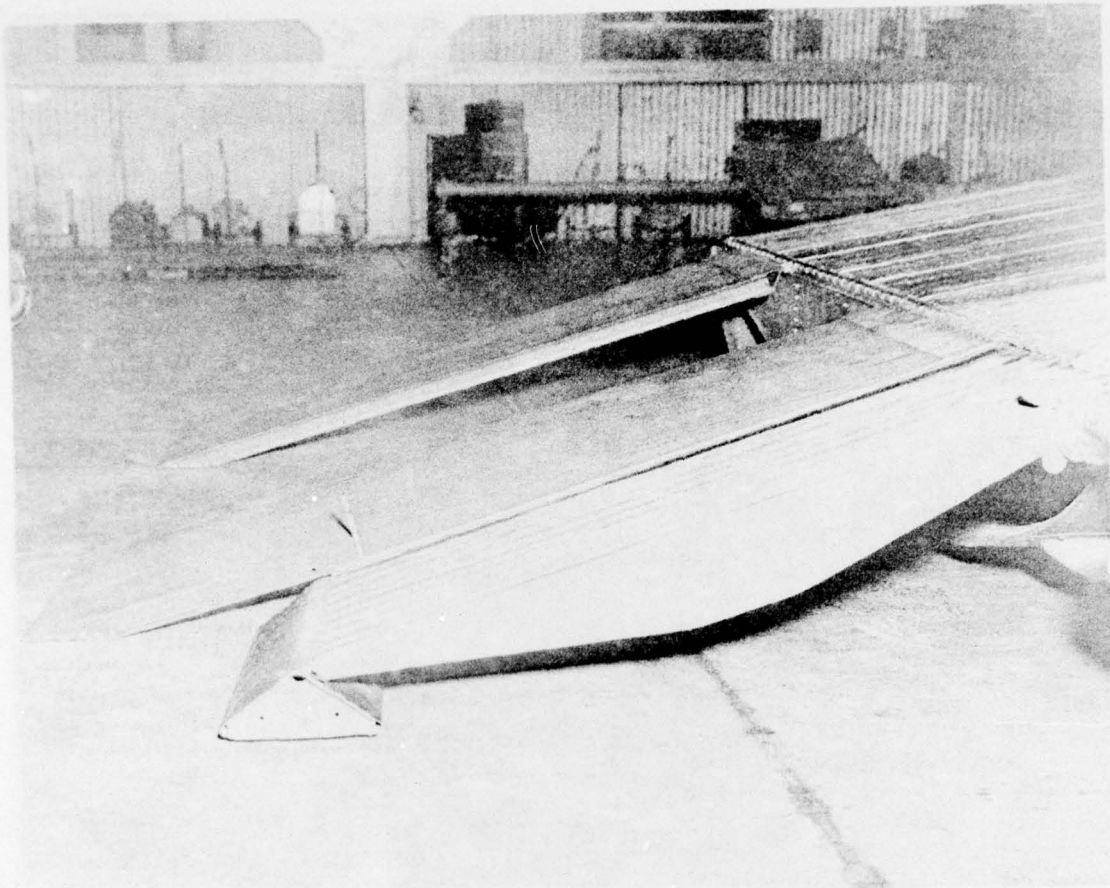


Figure 1

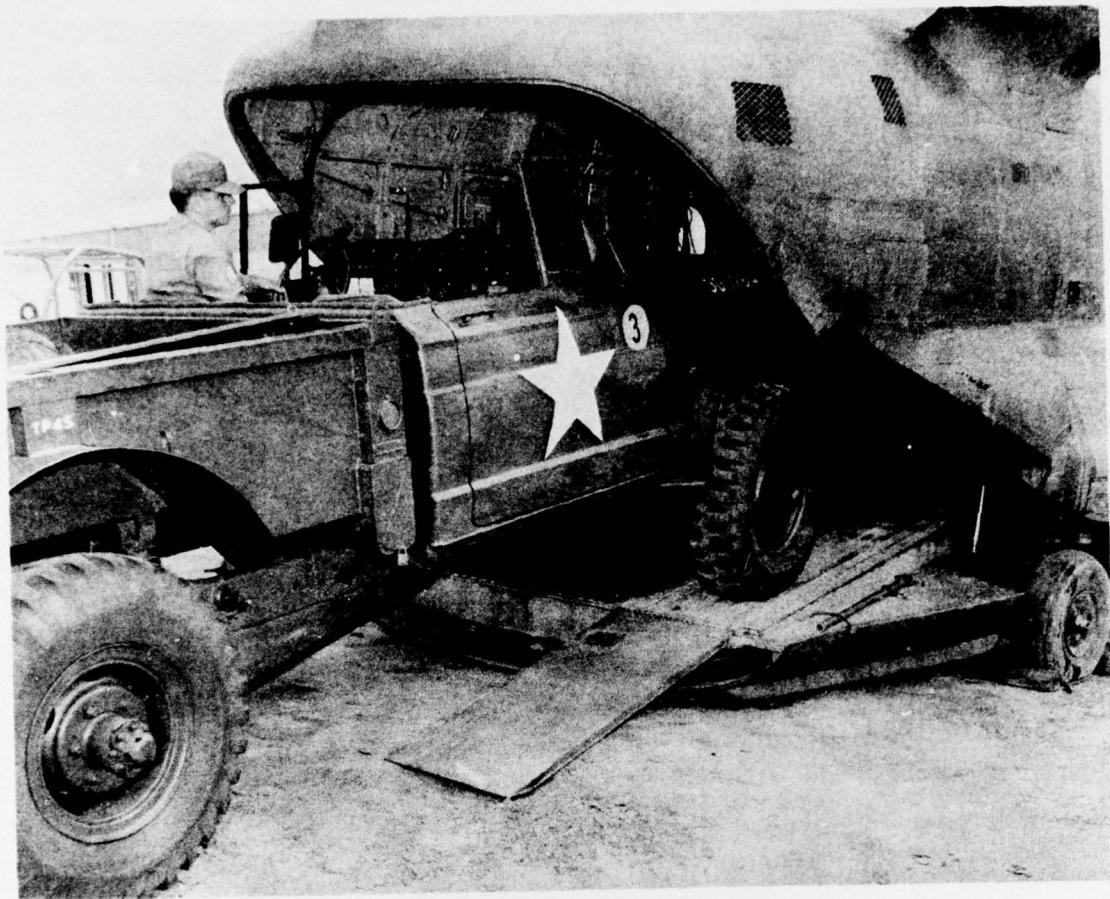


Figure 2



Figure 3

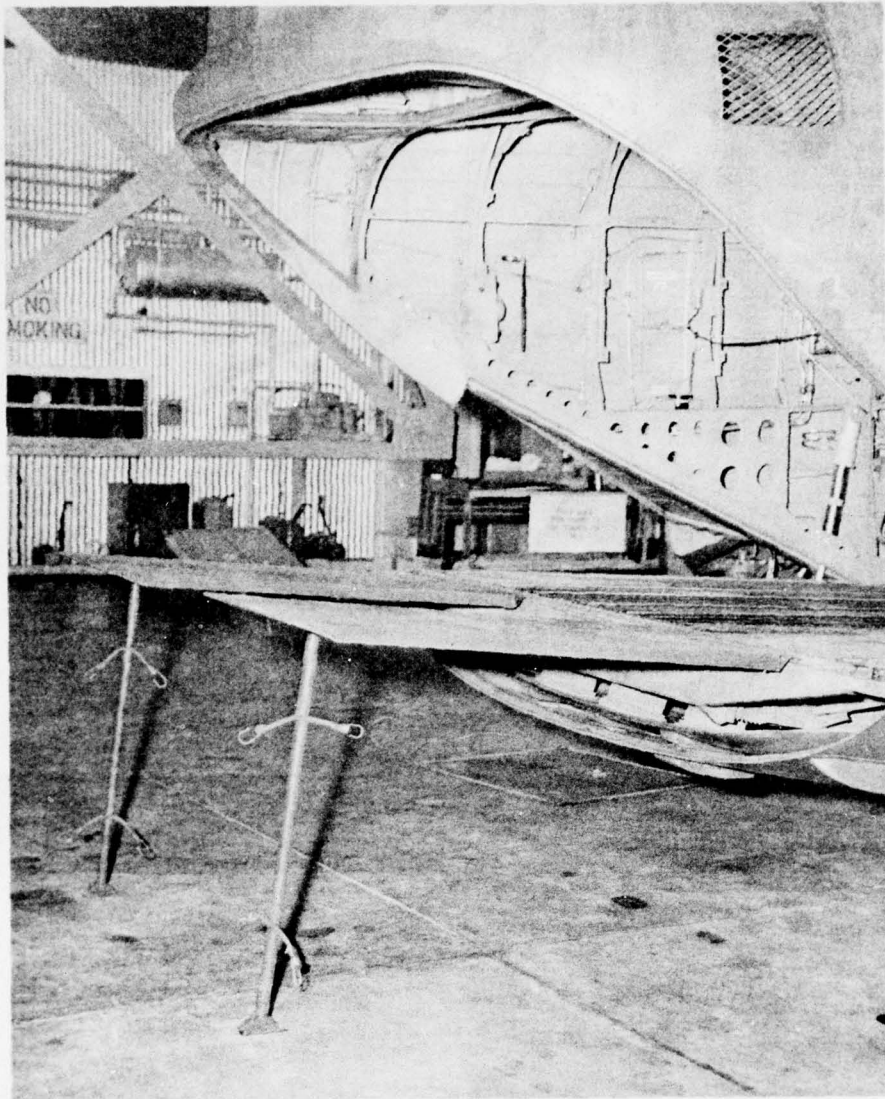
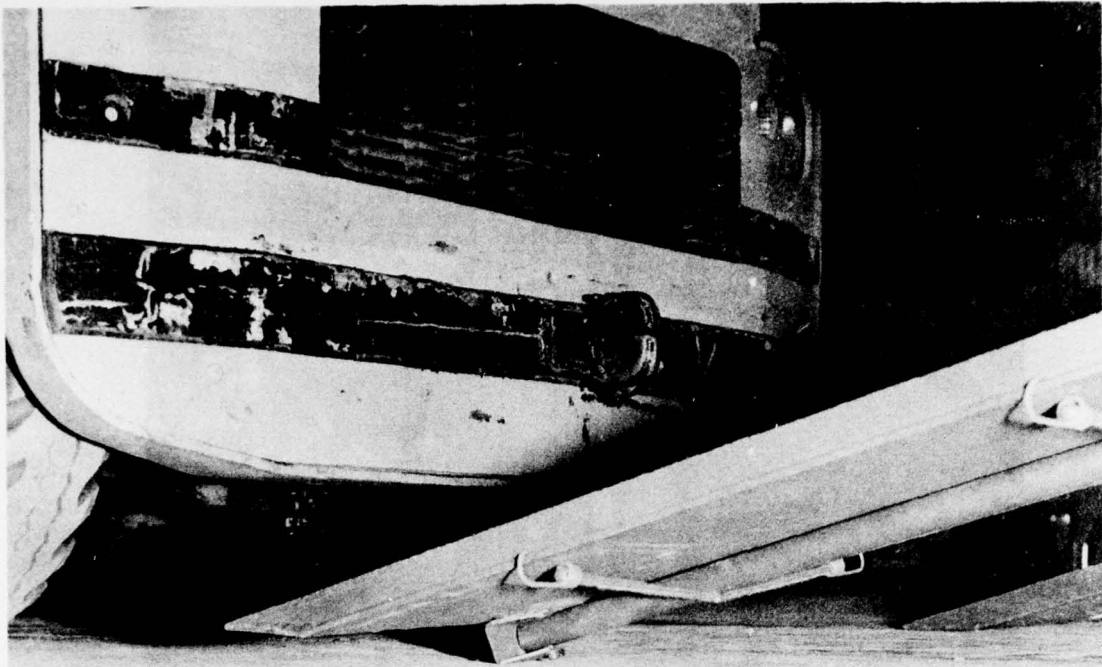


Figure 4



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Figure 5

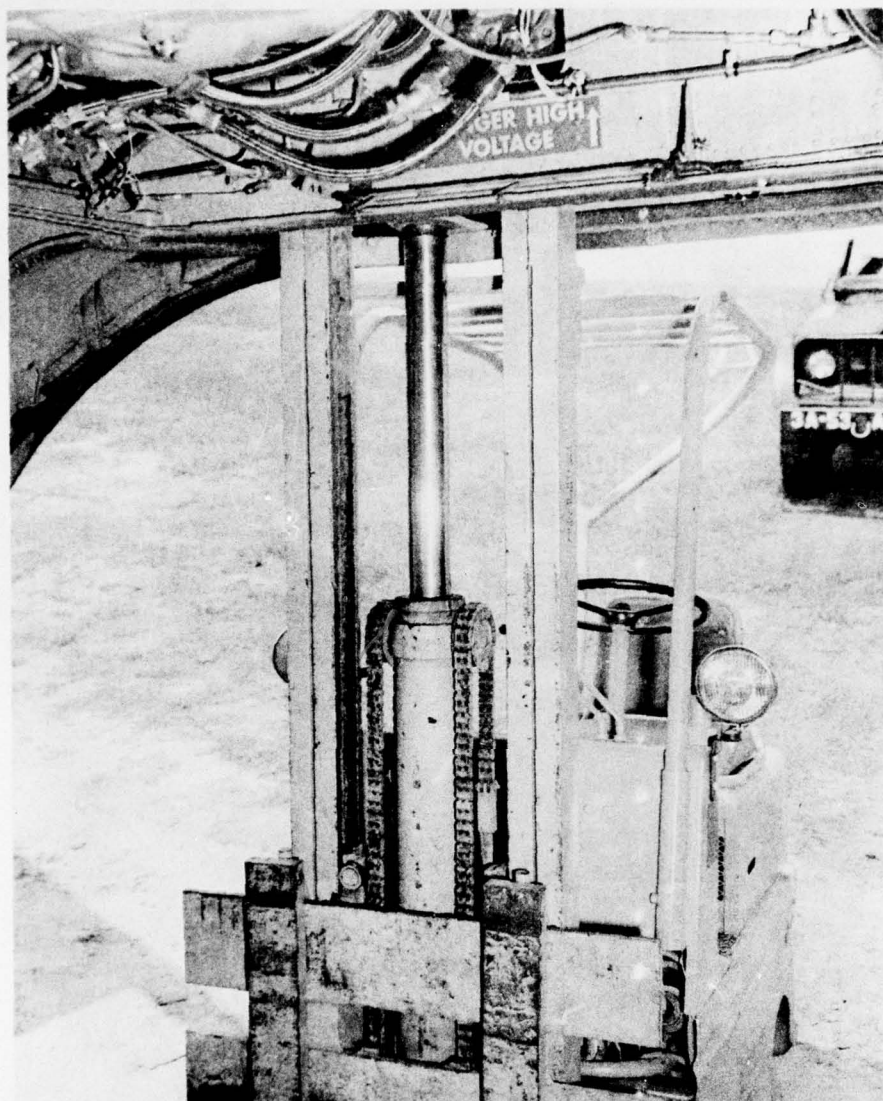


Figure 6